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EXAMINER

TUROCY, DAVID P

ART UNIT

PAPER NUMBER

1762

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

15

Office Action Summary	Application No.	Applicant(s)	
	10/780,506	STRAUS, MARTIN L.	
	Examiner	Art Unit	
	David Turocy	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/7/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Double Patenting

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

2. Claims 1-17, 20-21, 36-38, 40 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-14, 16-20, 22-26 of copending Application No. 10/938232. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claim Objections

3. Claims 9 and 22 are objected to because of the following informalities:

a. It is unclear whether the claims are directed to the temperature of the coating solution or the ambient temperature. For the purposes of applying art, the examiner is regarding claims 9 and 22 to be directed towards the temperature of the coating solution.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4-12, 15, 18-22, 24, 27-30, 37, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6773516 by Hardin et al. ("Hardin") in view of US Patent Publication 2004/0020568 by Phelps et al. ("Phelps").

Hardin, teaching of chromate free protective coating for zinc and zinc alloy surfaces, discloses a conversion coating, including a passivation treatment and then applying a rare earth salt primer coating solution and then further applying a silicate sealing solution (Column 4, lines 21-67, Column 5, lines 57-62). Hardin discloses applying the coating by any known process including immersion (Column 10, lines 28). Hardin discloses preferably providing a water rinse between each treatment step to reduce contamination of baths, however, it is the examiners position that the disclosure of Hardin does not require intervening water rinses and therefore the treatment steps are sequential (Column 4, lines 31-34).

Hardin fails to disclose a primer solution comprising alkali metal permanganate in the presence of halide ion with a pH of 1 to 8.

However, Phelps, teaching of a similar chromate free protective conversion coating for zinc, discloses a primer solution that provides a corrosion resistance comparative to hexavalent chromium coatings and higher than known cerium-based coatings (Paragraph 0030). Phelps teaches of a primer coating comprising a cerium source, an oxidizing species, a preparation agent source, a valance stabilizer (Paragraph 0046). Phelps discloses a cerium source comprises cerium chloride (Paragraph 0047-48). Phelps discloses an oxidizing species comprises potassium permanganate (Table 4). Phelps discloses a preparation agent source comprising a aluminum chlorides, alkali metal chlorides and other halide species (Paragraph 0064-0066). Phelps discloses using nitric acid as a valance stabilizer (Table 6). Phelps discloses using a priming solution with a pH between 1 and 7 (Paragraph 0754). Phelps discloses using a temperature between 5 to 100 °C (41 – 212 °F) (Paragraph 0757). Phelps discloses contacting time for the primer solution should be sufficient to allow for the formation of a uniform coating of an effective thickness (Paragraph 0758). Phelps discloses the contact time will vary with solution concentration, temperature, and pH (Paragraph 0758).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Hardin to use the primer coating suggested by Phelps to provide a desirable non-hexavalent chromium conversion coating because Hardin teaches providing a cerium based conversion coating and Phelps teaches of an improved cerium based conversion coating with comparable corrosion protection to hexavalent chromium as such one would expect use of the primer coating solution containing alkali

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metal permanganate in the presence of a halide ion to provide a non-hexavalent chromium conversion coating with a high level of corrosion protection similar to a hexavalent chromium conversion coating.

Hardin in view of Phelps teach all the limitations of these claims as discussed above, but they fail to disclose the specific pH range. However, Hardin in view of Phelps teaches a pH in the range of 1 to 7, which overlaps the range as claimed. Overlapping ranges are *prima facie* evidence of obviousness. It would have been obvious to one having ordinary skill in the art to have selected the portion of the pH range as taught by Hardin in view of Phelps that corresponds to the claimed range. *In re Malagari*, 182 USPQ 549 (CCPA 1974).

Claims 9, 10, and 22: Hardin in view of Phelps teach all the limitations of these claims as discussed above, but they fail to disclose the specific temperature range. However, Hardin in view of Phelps teaches temperature range of 41-212 °F, which overlaps the range as claimed. Overlapping ranges are *prima facie* evidence of obviousness. It would have been obvious to one having ordinary skill in the art to have selected the portion of temperature range as disclosed by Hardin in view of Phelps that corresponds to the claimed range. *In re Malagari*, 182 USPQ 549 (CCPA 1974).

Claims 11,12, and 24: Hardin in view of Phelps teach all the limitations of these claims as discussed above, but they fail to disclose the specific priming solution dipping

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time. However, Hardin in view of Phelps discloses the contact time will vary depending on solution concentration, temperature, or pH. It is the examiners position that the contact time is a known result effective variable, where not long enough and the solution does not provide an effective coating, and too long does not offer additional benefit of more protection against corrosion.

Therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal time for contacting the primer solution used in the process of Hardin in view of Phelps, through routine experimentation, to impart the substrate with the desired properties associated with primer coating.

6. Claims 2, 14, 16-17, 26, 31-34, and 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6773516 by Hardin et al. ("Hardin") in view of US Patent Publication 2004/0020568 by Phelps et al. ("Phelps") and further in view of US Patent 6759087 by Reuscher ("Reuscher") and US Patent 6638628 by Savin ("Savin")

Hardin in view of Phelps teach all the limitations of these claims as discussed above in the 35 USC 103(a) rejection, but they fail to explicitly state the composition of the silicate sealing solution.

However, Reuscher, teaching of a solution for sealing zinc substrates, discloses providing a solution comprising lithium silicate with potassium and sodium silicate (Column 2, lines 45-48, Column 3, lines 57-64). Reuscher discloses providing a sealing solution at a temperature from 80°F to 150°F and immersing the substrate for 20 to 300

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seconds (Column 6, lines 45-63). Reuscher discloses providing the aqueous sealing solution with a promoter (Column 6, lines 25-34). Reuscher discloses postbaking the substrate at 350°F (Example A).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Hardin in view of Phelps to use the silicate sealing solution suggested by Reuscher to provide a desirable corrosion protection because a silicate sealing solution containing lithium silicate and potassium silicate is known to provide corrosion protection for zinc substrates and therefore would reasonably be expected to effectively provide the desired protection to the zinc substrate.

Hardin in view of Phelps and further in view of Reuscher fails to teach of providing a silicate sealing solution containing a lithium polysilicate and another alkali metal silicate to provide 5 to 20 wt% SiO₂ to the sealing solution.

However, Savin, teaching of a chromium free corrosion resistant silicate coating composition, discloses a solution of sodium silicate or potassium silicate with lithium polysilicate is dried within a reasonable time and is extremely resistant to corrosion (Column 2, line 60 – Column 3, line 10). Savin discloses providing lithium polysilicate with potassium silicate in amounts that varies on the other components in the solution as well as the expected degree of corrosion resistance (Column 5, lines 9-14). Savin discloses a silicate solution using potassium silicate and lithium polysilicate, with a SiO₂ concentration within the range as claimed, where both silicates provided at least 10 percent of the total SiO₂ in solution (Example 6).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Hardin in view of Phelps and further in view of Reuscher to use the lithium polysilicate and potassium silicate solution suggested by Savin to provide a desirable silicate sealing solution because one would expect combining lithium polysilicate and potassium silicate to provide provide a sealing composition that dries in a reasonable time and is extremely resistant to corrosion.

7. Claims 3, 23, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6773516 by Hardin et al. ("Hardin") in view of US Patent Publication 2004/0020568 by Phelps et al. ("Phelps") and US Patent 6759087 by Reuscher ("Reuscher") and US Patent 6638628 by Savin ("Savin") and further in view of US Patent 4298404 by Greene ("Greene").

Hardin in view of Phelps and further in view of Reuscher and Savin teach all the limitations of these claims as discussed above in the 35 USC 103 (a) rejection above, however, they fails to explicitly disclose an acidic passivation solution.

However, Greene, teaching of a chromium free metal surface passivation, discloses immersing zinc substrates into a passivation bath containing oxalic acid and nitric acid (Column 5, lines 40-45, Column 6, lines 38-48). Greene discloses using 7.5 grams/liter of oxalic acid in solution (Column 5, lines 50-51). Green also discloses that a passivation bath should have a pH about 1.5 to 2.7 (Column 6, line 65 - Column 7, line 1).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Hardin in view of Phelps and further in view of Reuscher and Savin to use the passivation bath as suggested by Greene to provide a desirable conversion coating on a zinc substrate because Hardin in view of Phelps and further in view of Reuscher and Savin teaches a conversion coating process including a passification treatment and Greene teaches a known and conventional method of passifying a zinc substrate using an acidic activation treatment bath and as such one would reasonably expect the acidic activation treatment bath to be operable an operable and successful method for providing the desired passification of the zinc substrate.

8. Claims 13,25 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6773516 by Hardin et al. ("Hardin") in view of US Patent Publication 2004/0020568 by Phelps et al. ("Phelps"), US Patent 6759087 by Reuscher ("Reuscher") and US Patent 6638628 by Savin ("Savin") and further in view of US Patent 6206982 by Hughes et al ("Hughes").

Hardin in view of Phelps and further in view of Reuscher and Savin teach all the limitations of these claims as discussed above in the 35 USC 103 (a) rejection above, however, they fails to disclose providing molybdic acid promoter to the sealing solution.

However, Hughes teaches of a solution for providing a conversion coating on a metal including a rare earth element containing species and one or more additives (abstract). Hughes discloses using a silicate sealing solution with coating additives

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including molybdcic acid (Column 5, line 54 - Column 6, line 14). Hughes discloses adding this additive to enhance the coating adhesion and/or the rate of coating on the metal substrate (Column 5, lines 56-59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Hardin in view of Phelps and further in view of Reuscher and Savin to use the molybdcic acid promoter as suggested by Hughes to provide a desirable coating adhesion and rate of coating on the metal substrate because a molybdcic acid promoter is known in the art to provide sealing solutions containing silicates with increased adhesion and/or coating rate and therefore would reasonably be expected to effectively provide a sealing composition for a zinc substrate.

Hardin in view of Phelps, Reuscher and Savin and further in view of Hughes fails to teach providing 0.2 to 0.5 grams per liter molybdcic acid promoter to the sealing solution. However, Hughes teaches the additives enhance the coating adhesion and/or rate of coating on the metal substrate (Column 5, lines 56-59). In addition Hughes discloses providing a promoter in an effective quantity (Column 6, lines 25-26). Therefore it is the examiners position that the amount of molybic acid promoter added to solution is a result effective variable. If the amount of molybdcic acid is low it would result in not provide the desired adhesion and/or coating rate and too much molybdcic acid would not provide additional benefit of better coating adhesion.

Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to determine the optimal value for the amount of molybdcic acid

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promoter in the sealing solution of Hardin in view of Phelps, Reuscher and Savin and further in view of Hughes, through routine experimentation, to impart the desired silicate sealing solution with the desired properties associated with the addition of the molybdcic acid promoter.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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David Turocy



**TIMOTHY MEEKS
PRIMARY EXAMINER**